T05T90"E9T95960

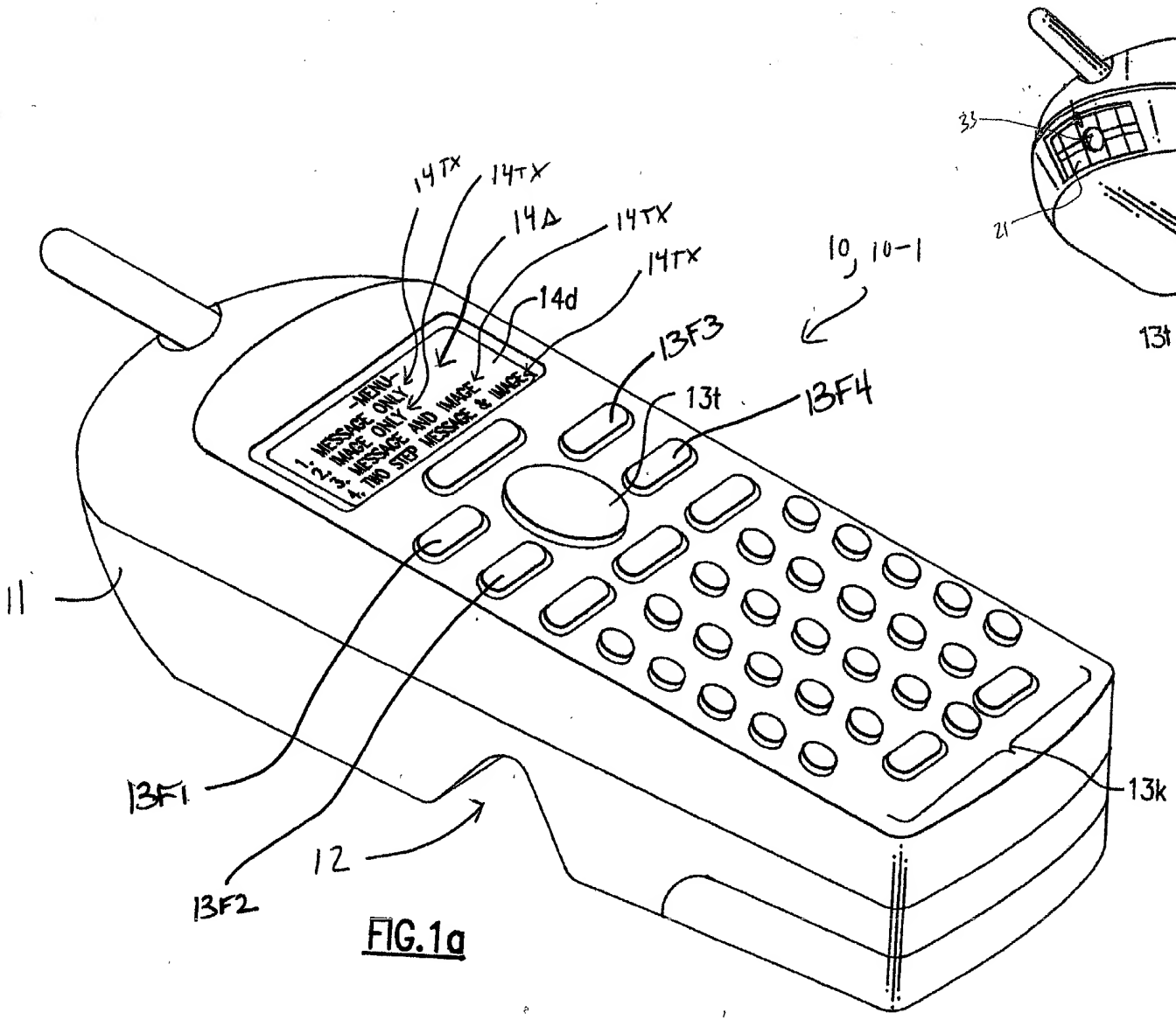

FIG.1a

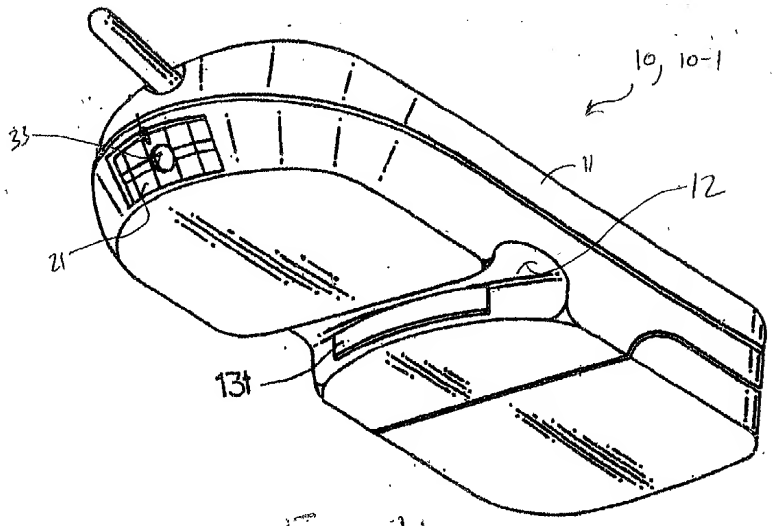

Fig 1b.

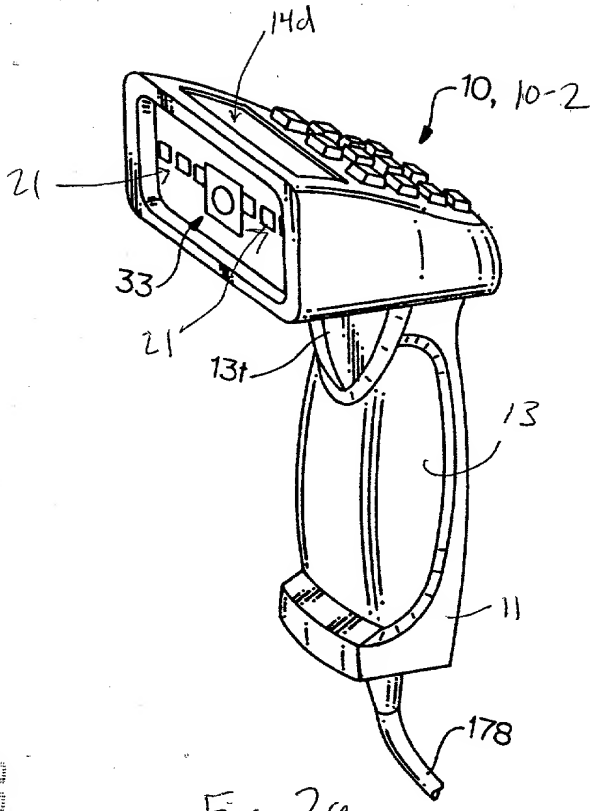

Fig 2a

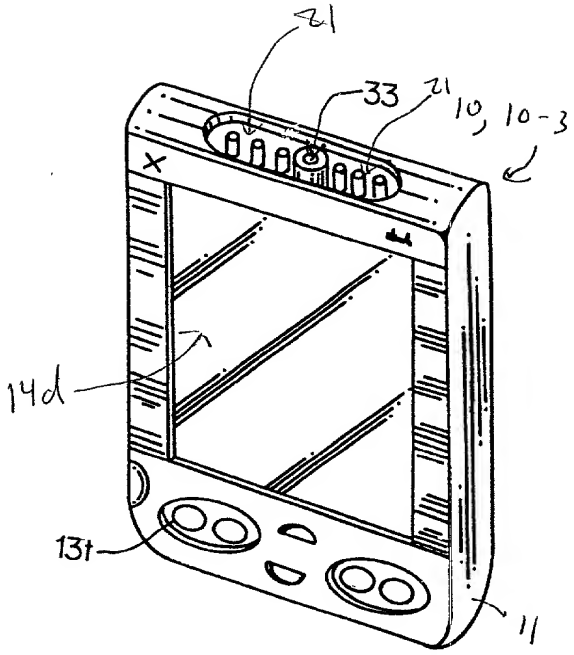

Fig. 2b

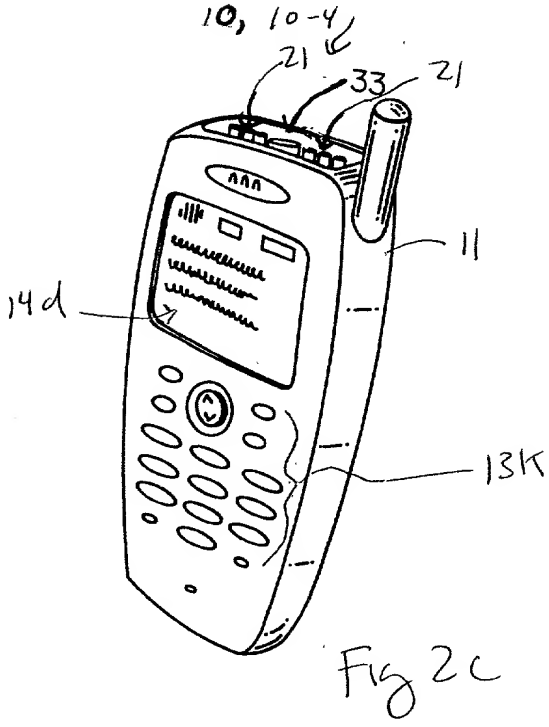

Fig 2c

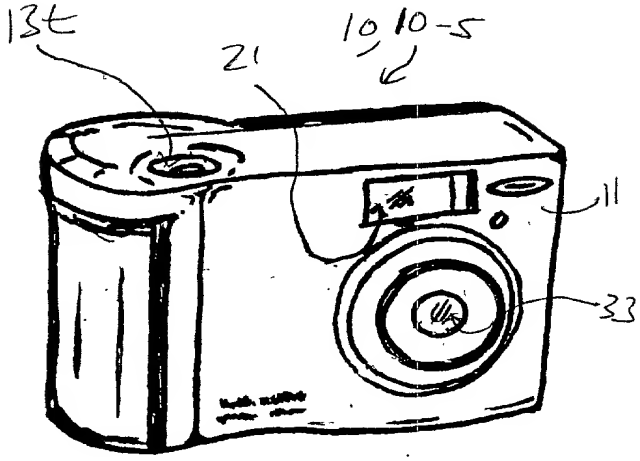

Fig 2d

TOSTSO E9TBSB60

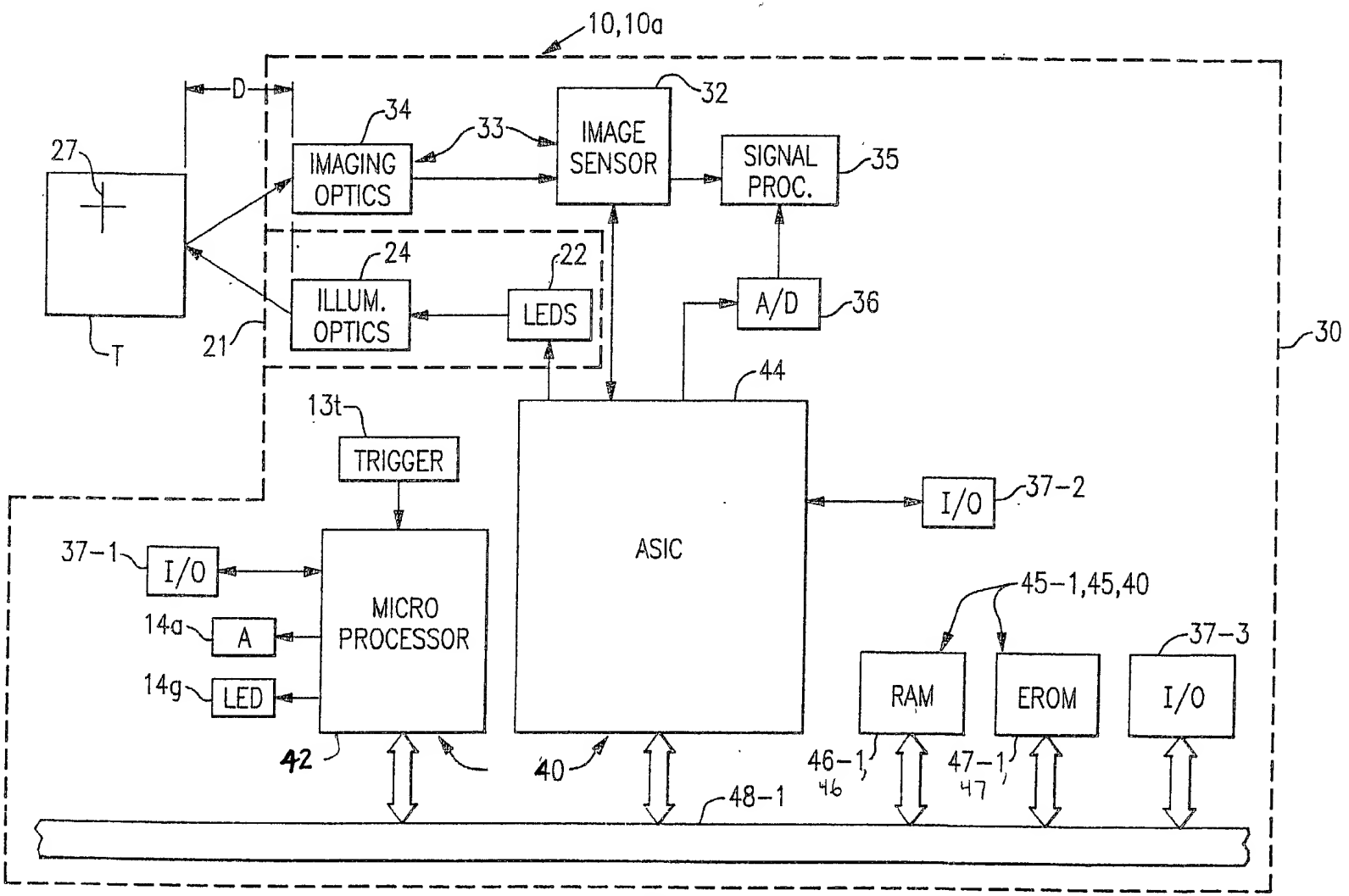

FIG.3a

TOSTSO"E9TB6986O

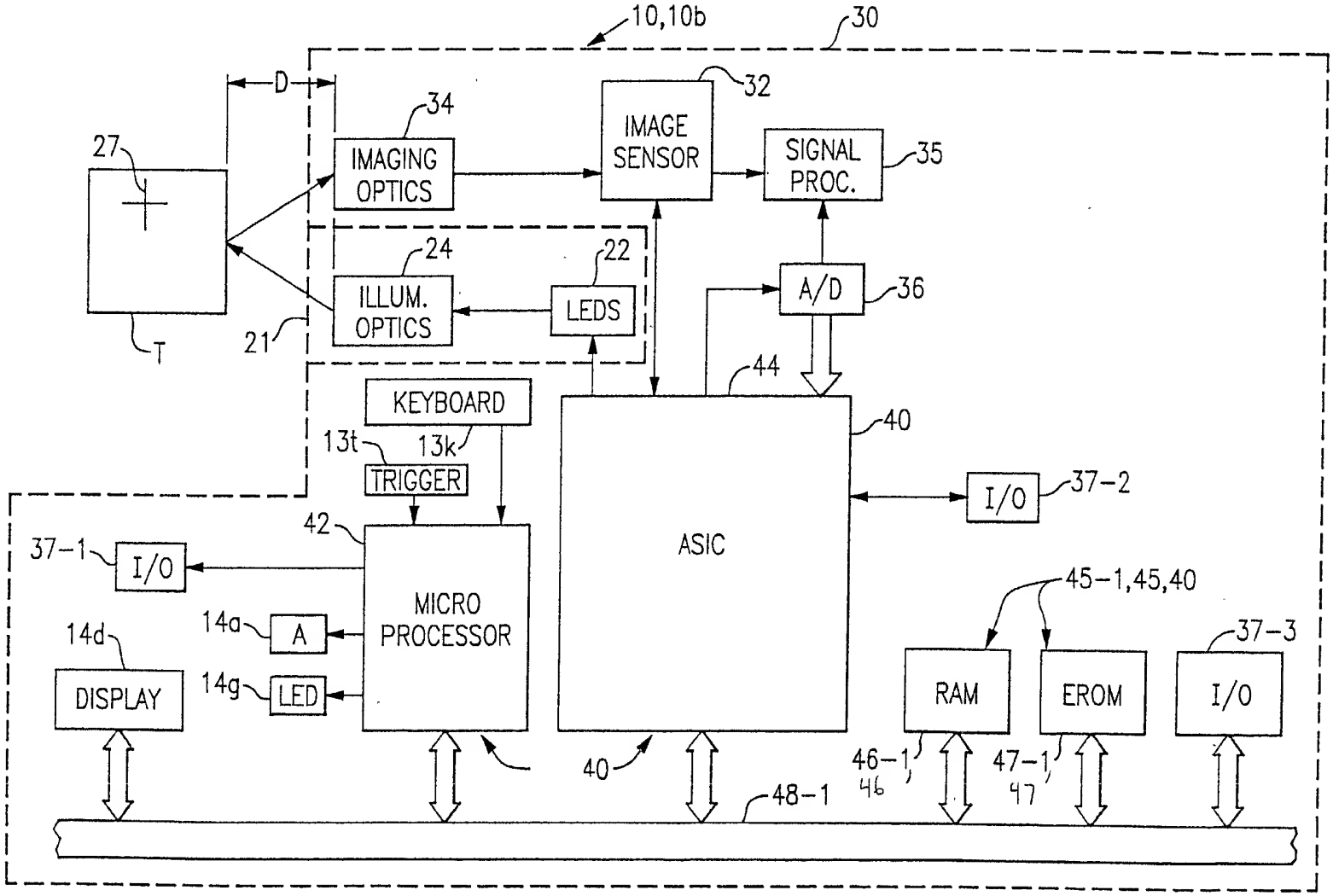

FIG.3b

TOSTSO "EP19S860

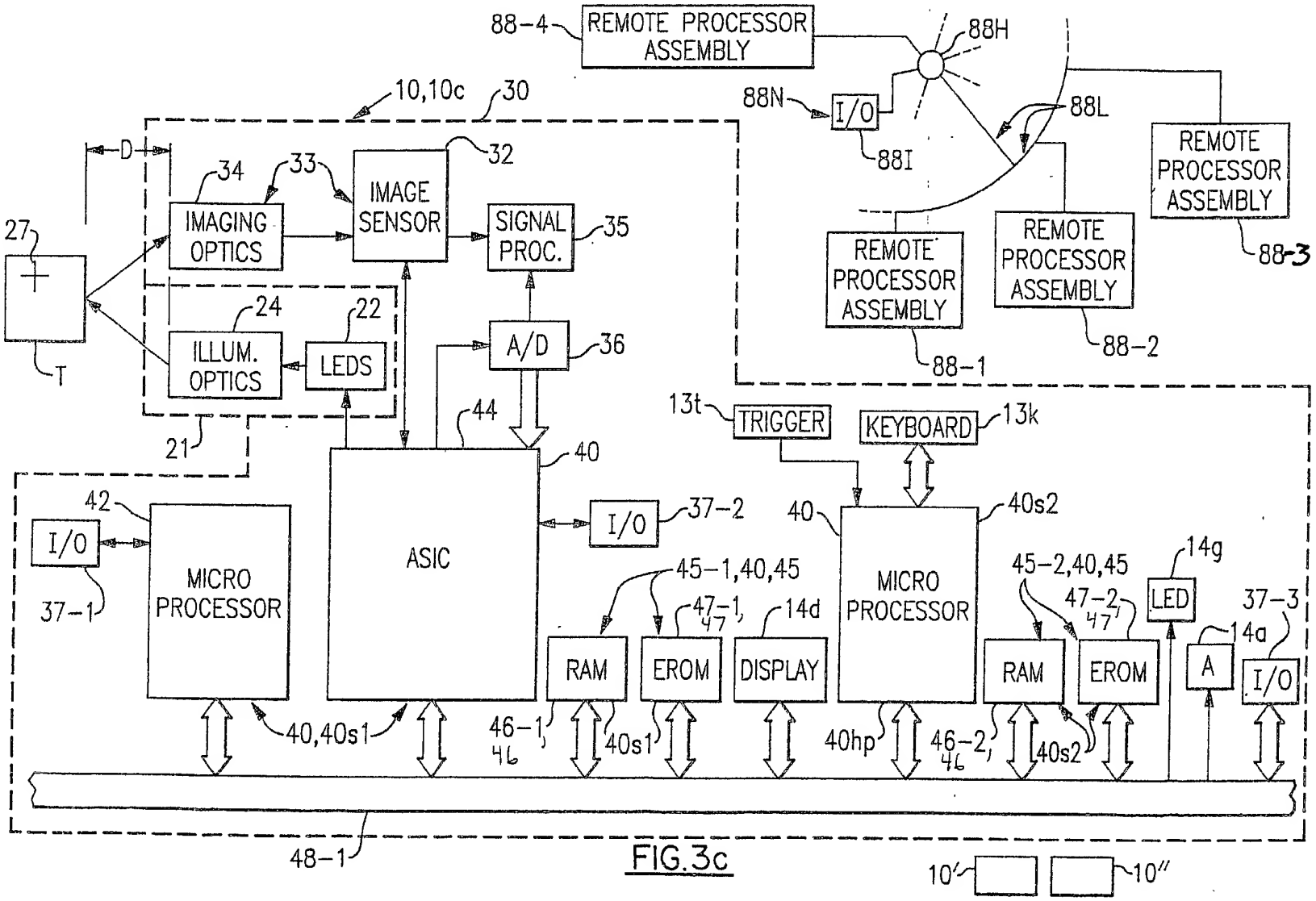

FIG.3c

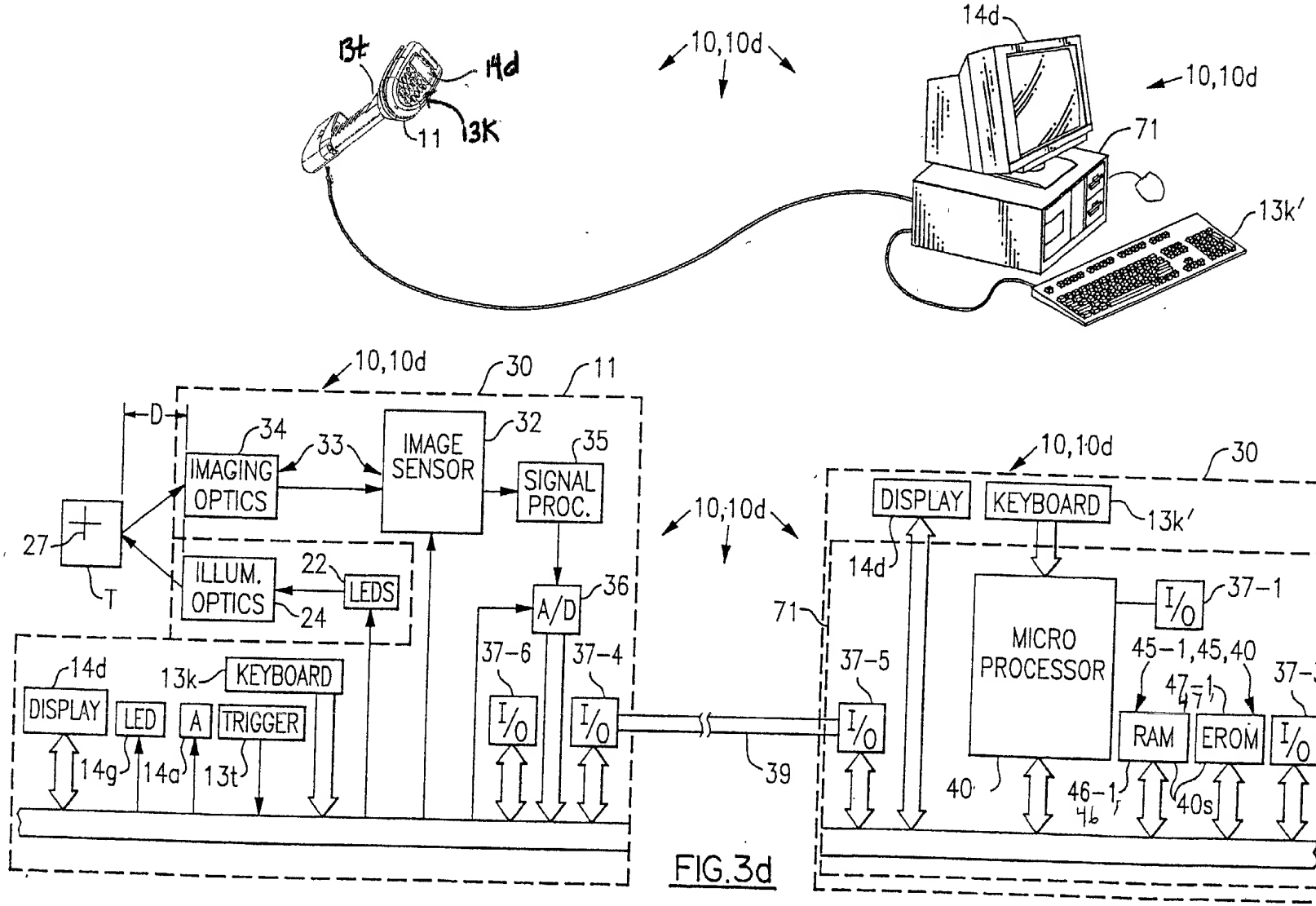
13t
14d
11
13K
10,10d
14d
10,10d
71
13k'
10,10d
30
11
D
34
33
IMAGING OPTICS
IMAGE SENSOR
32
35
SIGNAL PROC.
27
T
ILLUM. OPTICS
22
LEDS
24
A/D
36
37-6
37-4
14d
DISPLAY
LED
13k
KEYBOARD
A
TRIGGER
14g
14a
13t
I/O
I/O
39
10,10d
10,10d
30
DISPLAY
KEYBOARD
13k'
14d
71
37-5
I/O
MICRO PROCESSOR
I/O
37-1
45-1,45,40
47-1
37-3
RAM
EROM
I/O
40
46-1
46
40s

FIG.3d

TOSTSO"E9T8S9860.

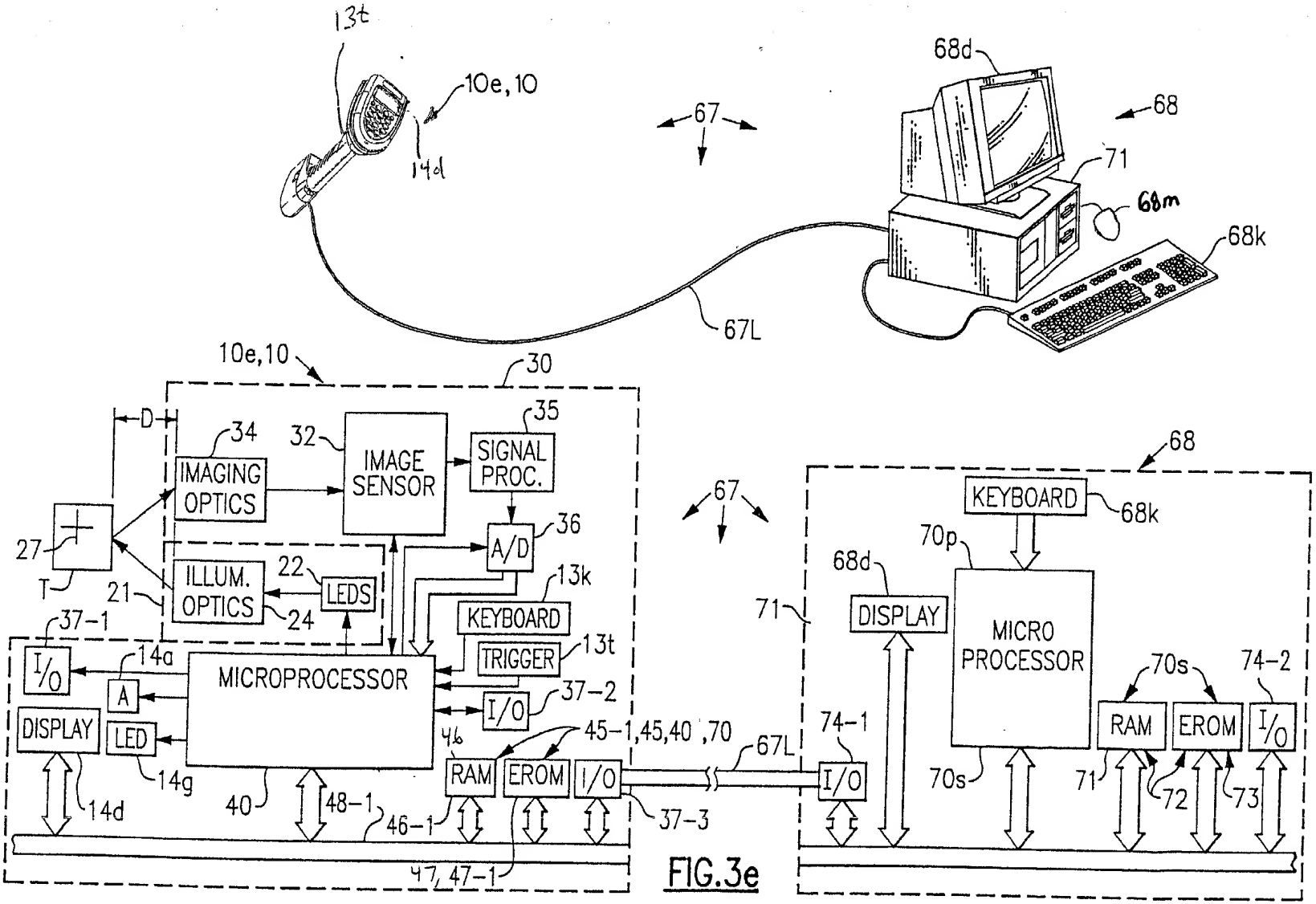

FIG.3e

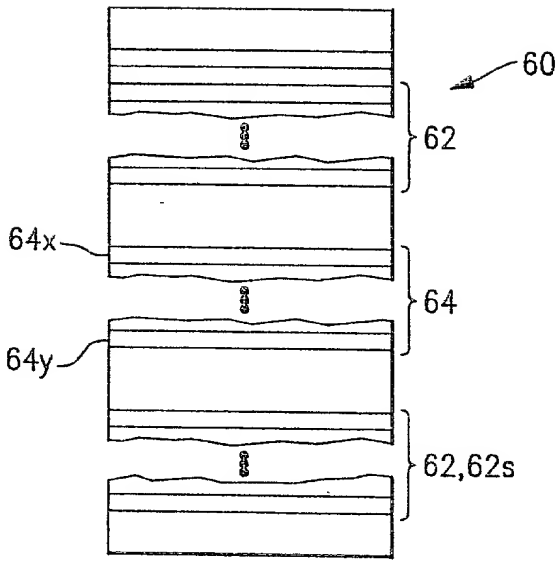

FIG.4a

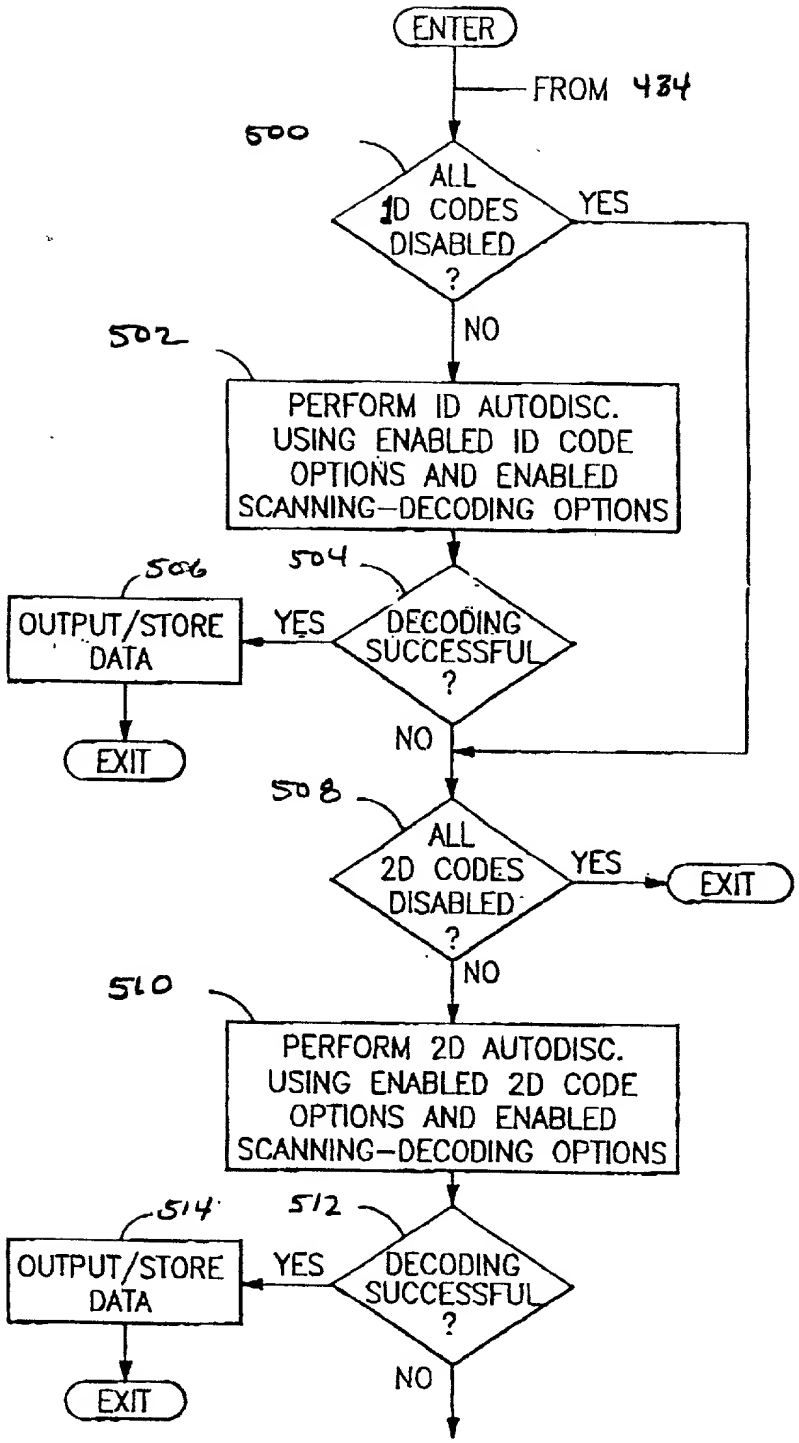
ENTER
FROM 434
500
ALL 1D CODES DISABLED ?
YES
NO
502
PERFORM ID AUTODISC. USING ENABLED ID CODE OPTIONS AND ENABLED SCANNING–DECODING OPTIONS
504
DECODING SUCCESSFUL ?
YES
506
OUTPUT/STORE DATA
EXIT
NO
508
ALL 2D CODES DISABLED ?
YES
EXIT
NO
510
PERFORM 2D AUTODISC. USING ENABLED 2D CODE OPTIONS AND ENABLED SCANNING–DECODING OPTIONS
512
DECODING SUCCESSFUL ?
YES
514
OUTPUT/STORE DATA
EXIT
NO

FIGURE 5

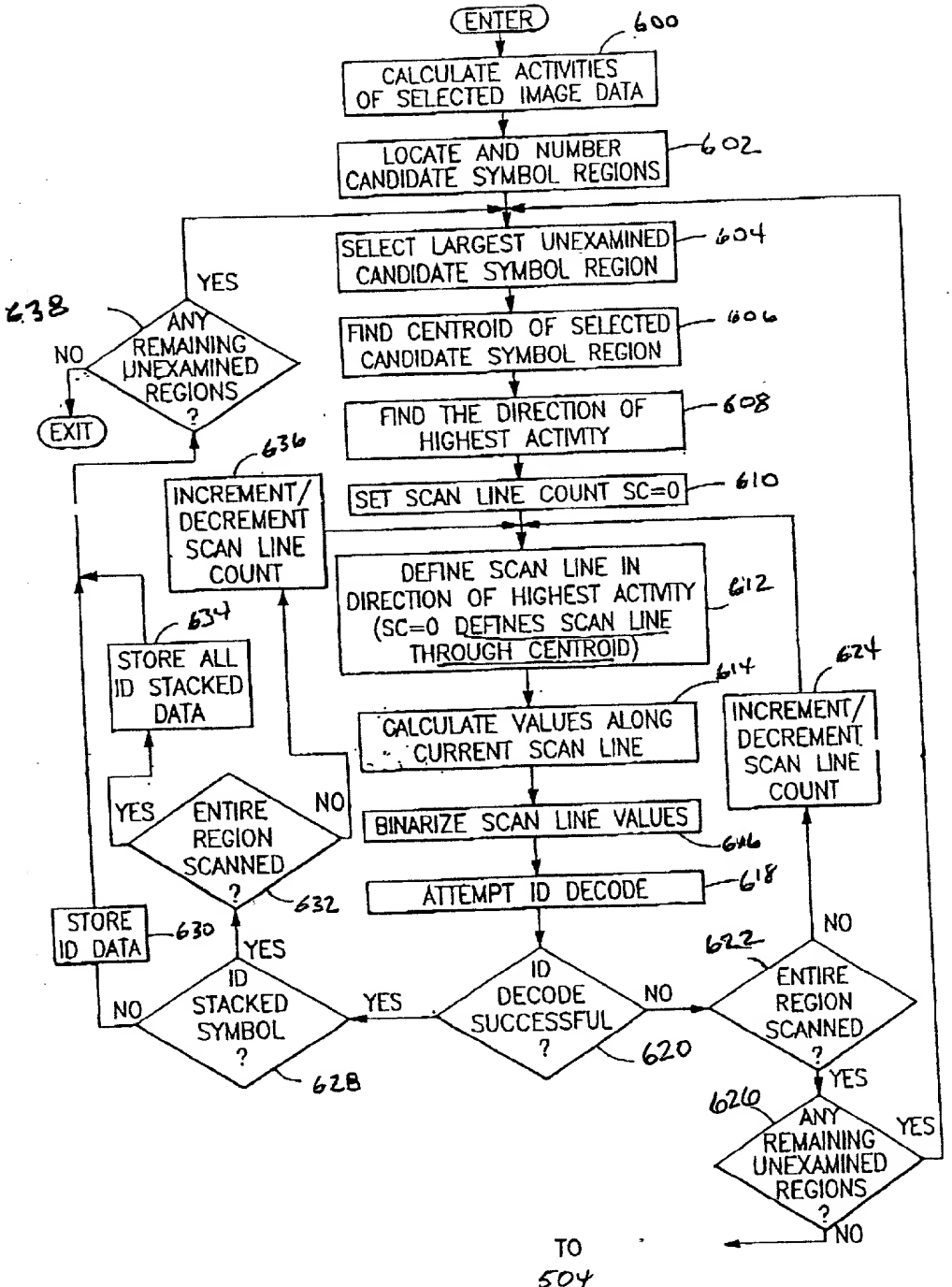
ENTER
600
CALCULATE ACTIVITIES OF SELECTED IMAGE DATA
LOCATE AND NUMBER CANDIDATE SYMBOL REGIONS
602
SELECT LARGEST UNEXAMINED CANDIDATE SYMBOL REGION
604
FIND CENTROID OF SELECTED CANDIDATE SYMBOL REGION
606
FIND THE DIRECTION OF HIGHEST ACTIVITY
608
SET SCAN LINE COUNT SC=0
610
DEFINE SCAN LINE IN DIRECTION OF HIGHEST ACTIVITY (SC=0 DEFINES SCAN LINE THROUGH CENTROID)
612
CALCULATE VALUES ALONG CURRENT SCAN LINE
614
BINARIZE SCAN LINE VALUES
616
ATTEMPT ID DECODE
618
ID DECODE SUCCESSFUL ?
620
YES
NO
ENTIRE REGION SCANNED ?
622
YES
NO
ANY REMAINING UNEXAMINED REGIONS ?
6260
YES
NO
EXIT
INCREMENT/ DECREMENT SCAN LINE COUNT
624
ID STACKED SYMBOL ?
628
YES
NO
STORE ID DATA
630
ENTIRE REGION SCANNED ?
632
YES
NO
STORE ALL ID STACKED DATA
634
INCREMENT/ DECREMENT SCAN LINE COUNT
636
ANY REMAINING UNEXAMINED REGIONS ?
638
YES
NO
EXIT
TO 504

FIGURE 6

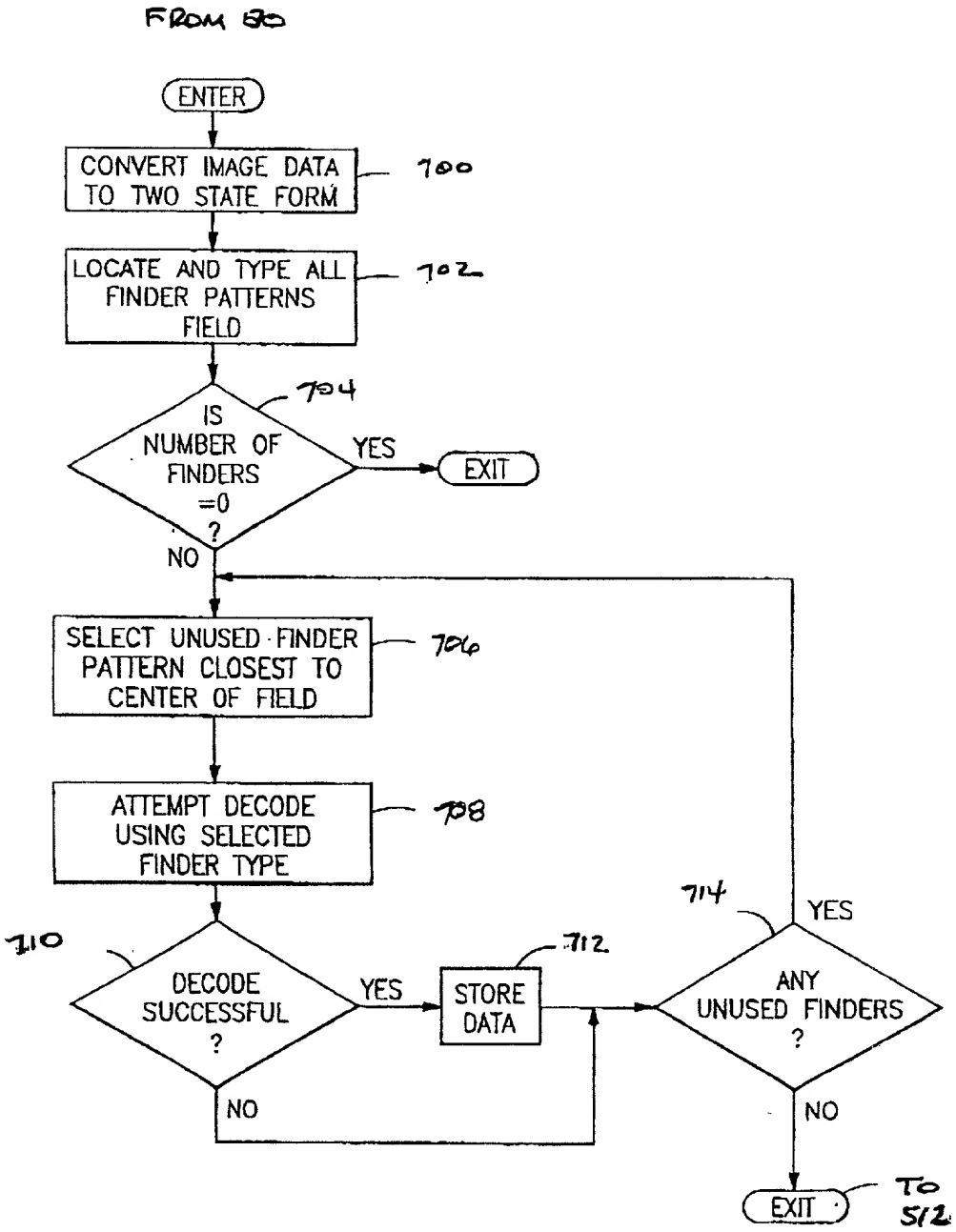
FROM 50
ENTER
CONVERT IMAGE DATA TO TWO STATE FORM
700
LOCATE AND TYPE ALL FINDER PATTERNS FIELD
702
IS NUMBER OF FINDERS =0 ?
704
YES
EXIT
NO
SELECT UNUSED FINDER PATTERN CLOSEST TO CENTER OF FIELD
706
ATTEMPT DECODE USING SELECTED FINDER TYPE
708
DECODE SUCCESSFUL ?
710
YES
STORE DATA
712
ANY UNUSED FINDERS ?
714
YES
NO
NO
EXIT
TO 512

FIGURE 7

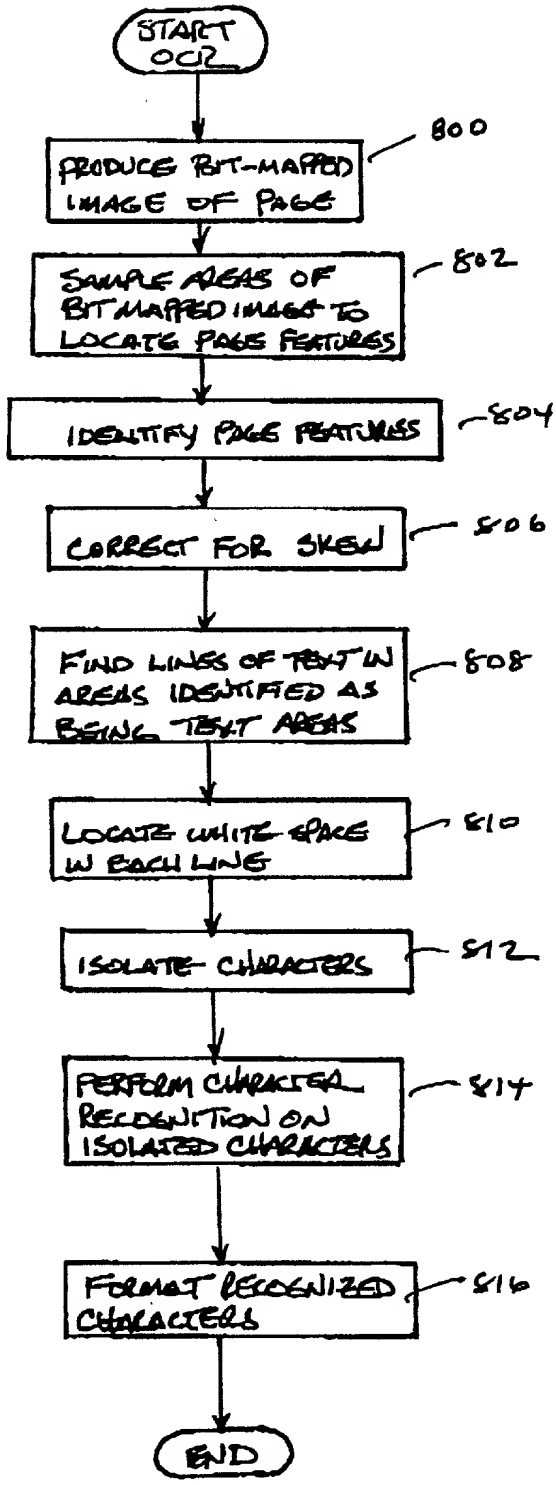
START OCR
PRODUCE BIT-MAPPED IMAGE OF PAGE
800
SAMPLE AREAS OF BIT MAPPED IMAGE TO LOCATE PAGE FEATURES
802
IDENTIFY PAGE FEATURES
804
CORRECT FOR SKEW
806
FIND LINES OF TEXT IN AREAS IDENTIFIED AS BEING TEXT AREAS
808
LOCATE WHITE SPACE IN EACH LINE
810
ISOLATE CHARACTERS
812
PERFORM CHARACTER RECOGNITION ON ISOLATED CHARACTERS
814
FORMAT RECOGNIZED CHARACTERS
816
END

FIGURE 8

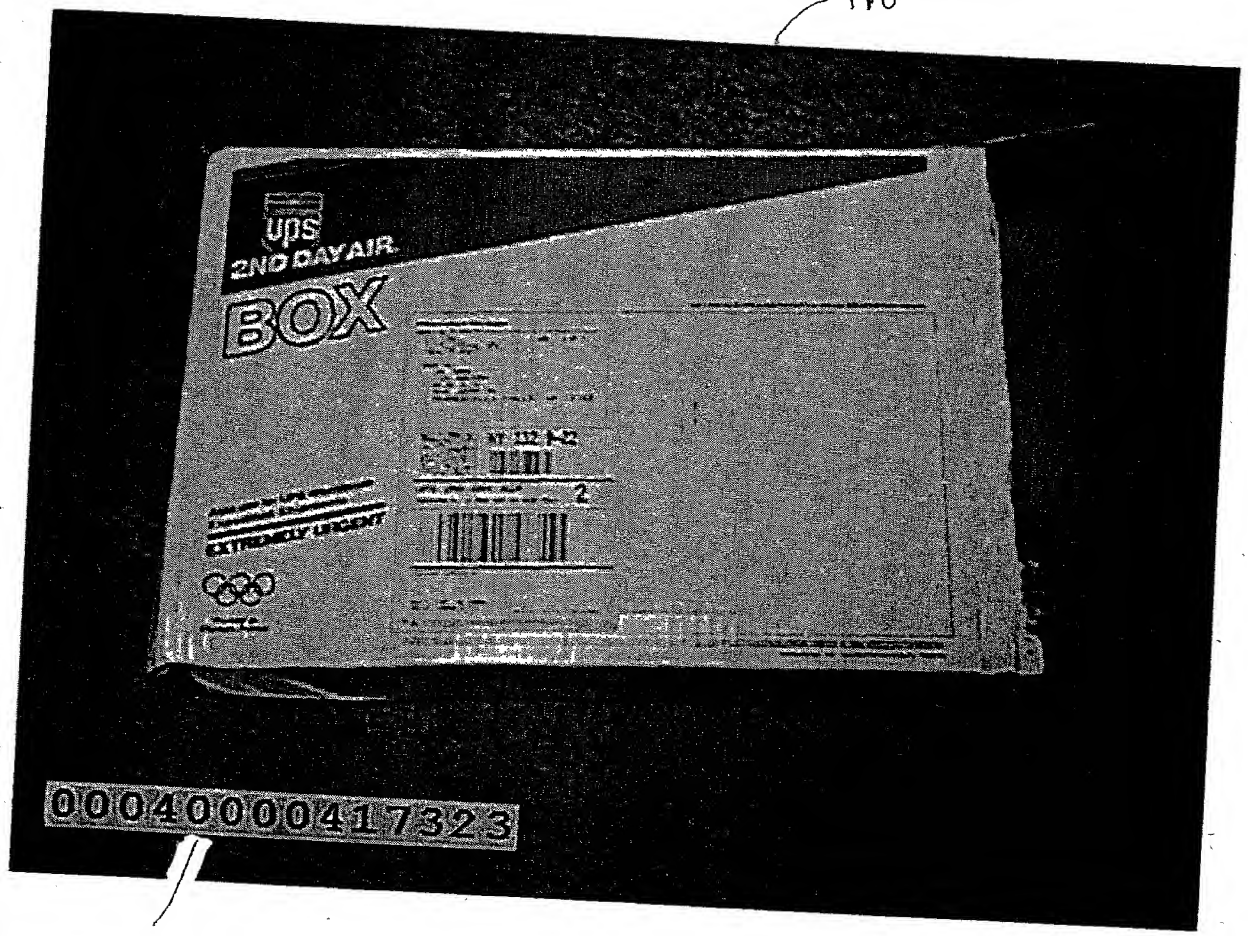
910
ups
2ND DAY AIR
BOX
EXTREMELY URGENT
0004000041 7323
912

Fig. 9a

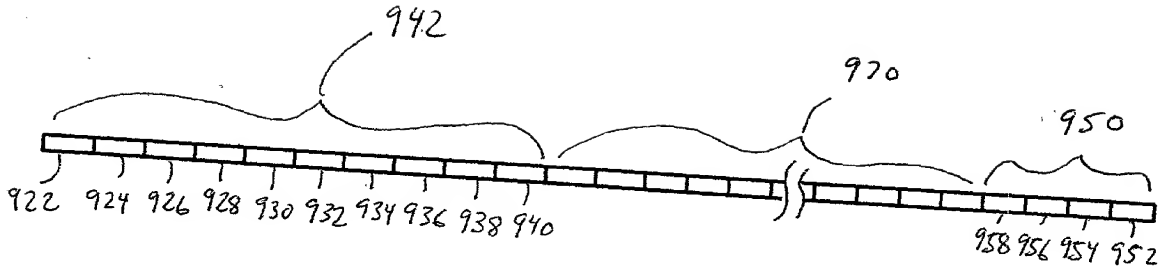
942
970
950
922 924 926 928 930 932 934 936 938 940
958 956 954 952

Fig 9b

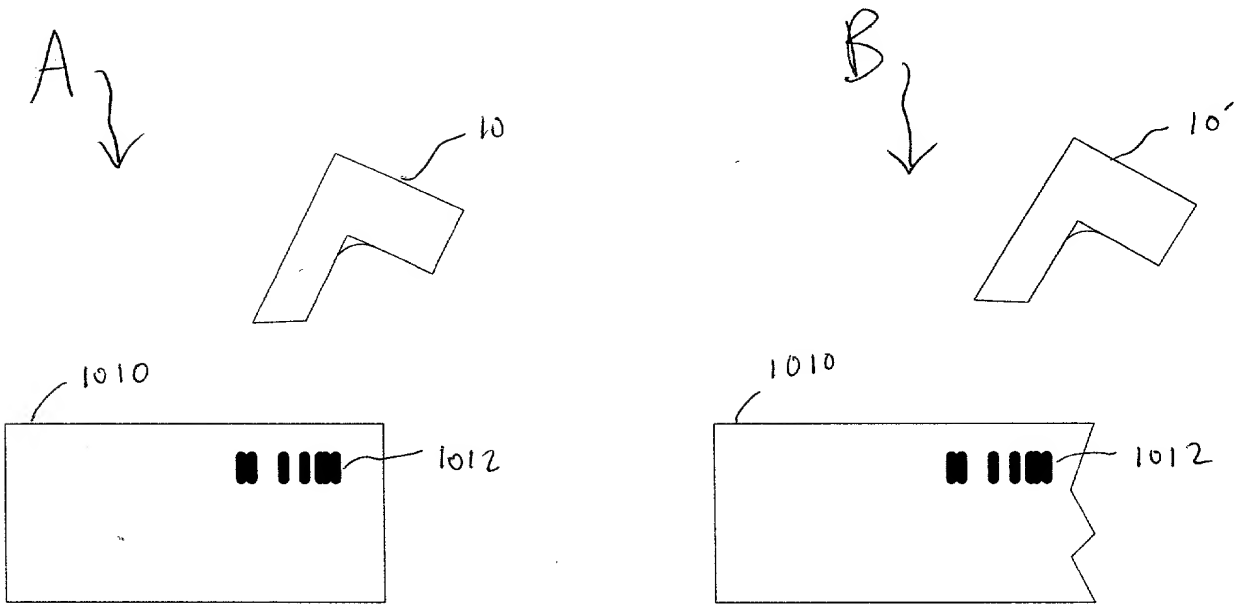

Fig. 10